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ATARI COMPUTER ENTHUSIASTS

3662 VINE MAPLE DRIVE, EUGENE, OR 97405

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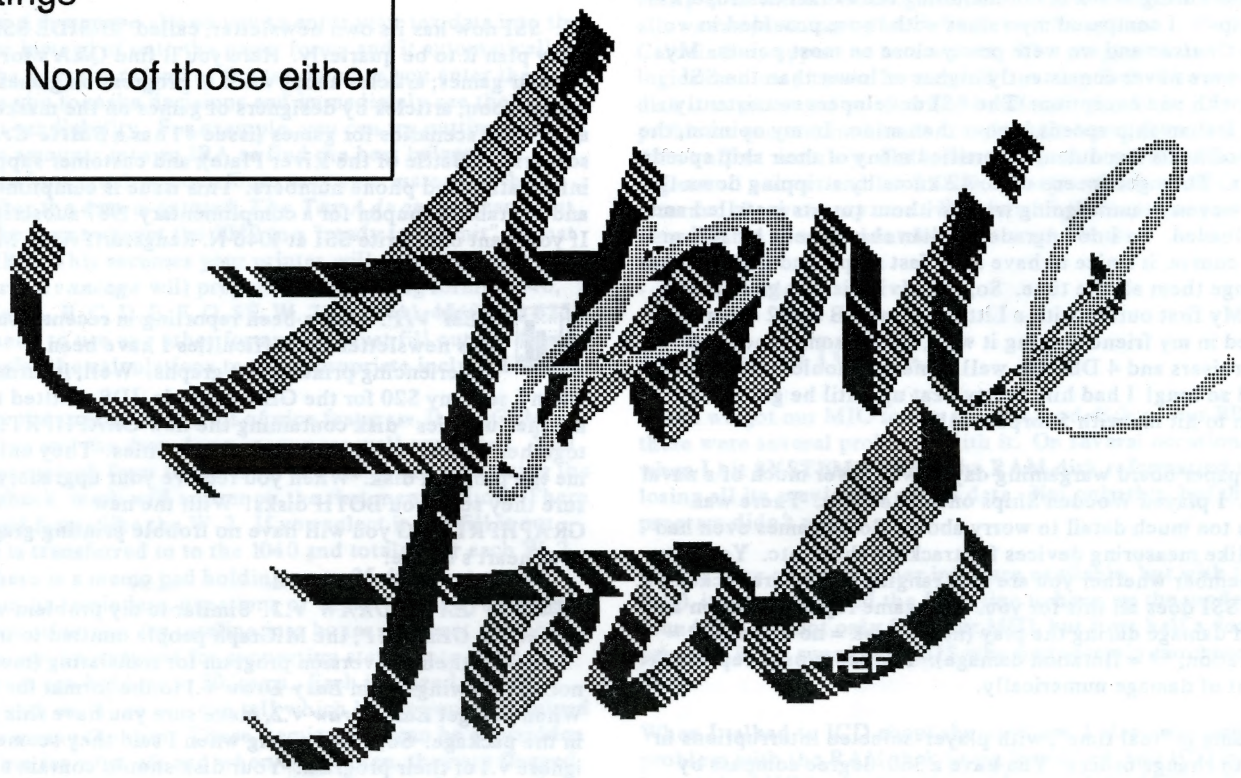
In this issue



BUMPAS REVIEWS

BATTLE CRUISER ($50, SSI, for any 48k Atari) is the latest from the fertile mind of Gary Grigsby. Using the same game system as their popular ***Warship***, this game gives you twice your money's worth. While ***Warship*** permits you to play Pacific theatre naval simulations, ***Battle Cruiser*** has two disks: One for WW2 scenarios, and one for WW1 scenarios.

There are no US ships available in ***Battle Cruiser***, and the British ships have some differences from those listed in ***Warship***. But it is possible to play the games together with some strategic overlay for a campaign game of the whole of WW2 at sea. My friend and I were playing a strategic game using ***Warship*** before I got ***Battle Cruiser***. Now we have expanded our play to include both games. Send me a SASE if you want a copy of my 1-page strategic rules overlay for the game.

Battle Cruiser permits the player to modify ship characteristics, so it is possible to simulate US, or any other non-included country's ships. The game includes lists of ships for the United Kingdom, France, Germany and Italy. Since the gun types are limited to these 4 countries, you might find you have to make compromises and adjustments for non-standard calibres. I had previously created a list of over 200 ships for all countries during WW2 (even including the Polish destroyers -- nice ships!). I compared my values with those provided in ***Battle Cruiser*** and we were pretty close on most points. My values were never consistently higher or lower than the SSI values with one exception: The SSI developers consistently valued Italian ship speeds higher than mine. In my opinion, the Italian officials fraudulently certified many of their ship speeds in trials. They got speeds up to 42 knots by stripping down the ships -- even to undergoing trials without turrets installed and ammo loaded. So I downgraded Italian ship speeds by 10% or so. Of course, it's nice to have such fast ships, and it is a bother to change them all the time. So, my advice is just go with the flow. My first outing with a Littorio class BB and 2 escorts resulted in my friend sinking it with the Nelson, Renown, 2 light cruisers and 4 DD. Oh well. I never should have stayed around so long! I had him pretty beat up until he got close enough to hit me with 5 torpedoes!

In my paper board wargaming days I was never much of a naval gamer. I played Wooden Ships once in awhile. There was always too much detail to worry about. Some games even had ruler-like measuring devices for tracking shots, etc. You have to remember whether you are still ranging or you are locked on. Ach! SSI does all this for you. The game reports location and type of damage during the play (no asterisk = no damage; * = penetration; ** = flotation damage). The score page reports the amount of damage numerically.

The game is "real time", with player-selected interruptions in order to change orders. You have a 360-degree compass by which to plot course (although I believe the game rounds off, so you might not have control down to the degree). You can plot torpedo fire, and targets are listed by visual or radar observation. I had some German gunners on the Scharnhorst in a scenario with only 4,000 yards visibility (FOG!), but they continued to fire up to 36,000 yards. Fires on board, and the flashes of gunfire permit spotting beyond visibility limits, but these Germans must have been firing by map coordinates and estimates of course and speed. Surely they could not see at that range! As a naval game, the terrain's not important (black water and blue and yellow ship symbols are all you need). But there is an editor with both games with which you can place islands and other land masses.

Your guns and torpedo mounts also have limited ammunition. You almost always run out of torpedoes. Once in awhile you run out of main gun ammo (time to break off the action!). When I reviewed ***Warship***, I think I said the 60x60 hex map grid seemed a limitation. Well, I was wrong. The map slides around to accommodate the mass of the ships in the action. Sometimes a slow ship at the far edge of the map will slip off map (never to return) even though it's going away from the map edge at its best speed! Transport and bombardment scenarios (i.e., those which require one player to exit the opposite side of the map) seem not to allow the far map edge to slip away from you, so you only have 60 hexes to go, but even in these scenarios the map can slip up and down. So watch out for your ships. Too often I have lost a good ship (not sunk, just out of action) trying to make a turn near a map edge only to see the report: "DE exits map"!

I am hooked to this game! And to ***Warship***, too. If you enjoy a good, dynamic game where the action is fast and furious, this game's for you.

PS: SSI now has its own newsletter, called "INSIDE SSI". They plan it to be quarterly. Here you'll find Q&A's for their popular games; articles about work in progress on games to appear soon; articles by designers of games on the market; additional scenarios for games (issue #1 has a ***Battle Cruiser*** scenario -- Battle of the River Plate); and customer support information and phone numbers. This issue is complimentary and contains a coupon for a complimentary 1987 subscription. If you want one, write SSI at 1046 N. Rengstorff Ave., Mountain View, CA 94043.

GEM VIP. I have been reporting in recent issues of this newsletter the difficulties I have been experiencing printing out graphs. Well, it turns out when I sent my $20 for the GEM upgrade, IDS omitted to send me the "utilities" disk containing the new GRAPHPRT.PRG, together with some other interesting utilities. They only sent me the program disk. When you receive your upgrade, make sure they send you BOTH disks! With the new GRAPHPRT.PRG you will have no trouble printing graphs to your heart's desire.

EASY DRAW v.2. Similar to my problem with ***GEM VIP***, the MiGraph people omitted to include their conversion program for translating (most, but not all) drawings from ***Easy Draw*** v.1 to the format for v.2. When you get ***Easy Draw*** v.2, make sure you have this program in the package. So, I was wrong when I said they seemed to ignore v.1 of their program. Your disk should contain a document file on the use of the conversion program describing its use, even though the manual doesn't mention it.

-- Jim Bumpas, A.C.E. Co-Editor

The Tax Advantage

If you dislike preparing tax returns as much as I do, you will be pleased to know there is a program available for the ST which takes you through filling out your forms and calculating your tax refund or, heaven forbid, the tax owed.

I used to feel there isn't really any need for a computer to do taxes because most of the work is in getting the information together. The actual filling out of the forms and doing the calculations was not so complex. A few years ago I tried using a tax preparation program on the Atari 800 and I was convinced to never again prepare my tax without one. The program was ***The Tax Advantage*** written by Harry Koons and Henry Hilton and was distributed by Continental Software. Henry Hilton and Harry Koons have started a new company, Double Eagle Software, Inc., 2210 Wilshire Boulevard., Suite 875, Santa Monica, CA 90403, phone (203)459-9748 and they are producing ***The Tax Advantage*** for the 8-bit Atari's and now also for ST's. The ST version is written Harry Koons and David Chenette. Although this review is on the ST version, I have used the 8-bit version for the last three years and it is accurate, easy and definitely worth using. One very important note. DO NOT confuse ***The Tax Advantage II*** now sold by Continental Software (Arrays, Inc.) with ***The Tax Advantage*** sold by Double Eagle Software! Double Eagle Software is dedicated to user support.

The Tax Advantage allows you to enter your tax data into the computer instead of onto the paper forms and it automatically calculates your tax refund or the tax owed as you enter the data. This lets you to make decisions and immediately see the resultant tax liability. For example, you can try putting different amounts into an IRA to find the best balance or determine how much to contribute next year instead of this year. After the data is entered, ***The Tax Advantage*** can print the all the forms except the 1040 in a "ready to submit" format for the IRS. This assumes your printer will do underlining. ***The Tax Advantage*** will prepare the following forms: 1040, Schedules A, B, C, D, E, F, G, SE, W, 2106, 2441, 4562 and 6251. If you need to use any other forms, you must fill out the forms and transfer the calculations to the appropriate included form.

The Tax Advantage has a lot of nice features. It is a GEM application and the drop down menus are well organized. You can choose which form to use from the menu and after using the form, a check mark will appear on the that menu option. There are special forms like the W-2. If you select it and fill it out, the data is transferred to to the 1040 and totaled for each W-2 used. There is a memo pad holding up to 25 different notes. These can be reminders, questions or whatever else you desire. There is a calculator for totaling into boxes. Almost any box on any form can be itemized for supporting statements and each itemization can hold up to 50 items. Each itemized box is flagged with an "I" so you can tell which boxes you've itemized by just viewing the form. These itemizations can be overridden at any time for what-ifs and when overridden, they are flagged with an "O". If you choose itemize on a box requiring another form, the required form is automatically brought up to the screen. Capital gain/loss itemization includes date acquired, sold, gross sales price, cost, etc.

Forms can be printed in draft for review or in IRS format ready to submit to the IRS. All or selected itemizations can also be printed to include with your returns as supporting documents. As mentioned, the 1040 form is only printed in draft mode and the data must then be transferred by hand to the original 1040. This is due to IRS regulations. One feature I especially like is the option to print any form and itemization to the screen. There is also an on-line help available.

The Tax Advantage has built in codes for Epson, Gemini and Centronics printers and lists and allows entry of codes for over 170 different printers. Entry of these codes is very easy and only takes a minute. This should cover almost any printer on the market.

On the negative side, ***The Tax Advantage*** is not as "polished" as it could be. Each time the program is run, the default data drive must be specified if it isn't the boot drive. There is no way to remove itemization from an entry. If you itemized by mistake, the only way around it is to override. That's easy to do but when you look at the form, you can't tell if you really wanted to delete the itemization or just forgot to remove the override. There should be a warning if you save your data or print the forms when there are overrides in effect. The documentation is easy to understand but it isn't complete. I tried finding information about the W-2 forms in the index and finally found it under "D" for "Dialog W-2".

Bottom line: ***The Tax Advantage*** is a good program which easily does the tax calculations and form printing for you. It allows tax planning by including override options. Calculations appear to be accurate. The program is laid out in a logical and easy to use format and it is very fast. The program disk is unprotected as all critical software should be. The problems encountered made the program less convenient but didn't affect accuracy. Telephone support is provided free to registered owners and for $10.00 for users who have not returned the warranty card. Updates for the next tax year will be available at a discount for registered owners.

-- Steve Golden

ICD's MIO

When we got our MIO to run a larger hard disk on our BBS, there were several problems with it. On several occasions, when I hit SYSTEM RESET, the RAM disk reformatted itself, losing all its previously stored data. Not only this, but the BBS program didn't work.

OASIS runs on every other interface available, but with the MIO, it never dropped the DTR line to hang up the modem. I found this out not only from our MIO, but from half a dozen other SYSOPs running OASIS who had recently purchased an MIO.

When I talked to ICD about the problem, I also mentioned the problem with the RAM disk being formatted, and ICD insisted I send the MIO back. I explained I needed the MIO so I could change the BBS to get it to work for all the other SYSOPs who were having problems. Also ACE averages 40-50 callers a day who won't be too happy about ACE being without a hard disk. ICD assured me they could ship out a replacement as soon as they got ours. I shipped it out Blue Label. 10 days later, I

called to find out what had happened, and they still hadn't shipped the replacement. When they finally did ship it, they sent it UPS ground.

ACE and about 6 other SYSOPs had to wait almost 3 weeks before they could use their MIO's because ICD didn't fulfill their commitment. If they have so little disregard for ACE and the author of OASIS, imagine how they're going to treat an individual user. I suggest you think very carefully before buying an MIO if you think you might need support. I can't give you statistics, but I have talked to several SYSOP's who have had to have their MIO replaced.

The MIO's handling of the DTR line may result in a BBS not working. When the DTR line is dropped, a Hayes compatible modem will hang up and no longer answer the phone until the DTR line is raised. If you drop the DTR line and send out a +++ command to the modem, the MIO will lock up. If you drop the DTR line and change to concurrent mode, the DTR line will be raised whether you want it to or not. If you press SYSTEM RESET, the DTR line will first be dropped hanging up on any caller, and then raised! This means you must turn the modem off if you're going to press SYSTEM RESET. I might add, the 850 interface does not have any of these problems. The DTR line stays exactly the way you left it.

-- Ralph Walden, A.C.E. Sysop

TWO ST FOOTBALL GAMES

GFL CHAMPIONSHIP FOOTBALL. This new game simulation from GAMESTAR is a disappointment. It has pretty good graphics but joystick manipulation is too complex to make the game very enjoyable.

The game concept places you in either the tailback or wide receiver position, depending upon a run or pass situation, and your view of the field is from either of those perspectives. While this approach is unique, it is also frustrating. I miss the overall view of the field and much of the excitement is simply not there.

Running involves manipulating your runner through predetermined "holes" and trying to out maneuver the opposition through dazzling joystick control. Supposedly, you can "stiff-arm" and accelerate through and around the defense, but I find these effects don't seem to work very well. Perhaps they require more practice time than I feel is a reasonable investment for this type of game.

Passing requires you to count the "footsteps" in various pass patterns and run them to perfection. In practicing just passes for several hours, I managed to complete 4 passes for small gains. I lost interest and predict you will to.

What I am waiting for is a Football game which is a real simulation such as XOR fine release for the IBM. Sports simulations using percentages and statistics are not only more real but rely more on your knowledge of the game than in your ability to use a joystick. A Football game for adults is badly needed.

3-in-1 FOOTBALL. A better simulation, although without any graphics, comes from a relatively small company called LANCE HAFFNER GAMES. This company has released a football simulation called ***3-IN-1 FOOTBALL*** which is built entirely upon statistics. In spite of the text only limitations, the game is not only very playable but the outcome is very accurate statistically to the real game. This game has a very large team data disk (2 disks in the game) including all college teams for 1984 plus all-time great college teams...and an assortment of great pro teams. During half-time of ***3-in-1 FOOTBALL***, as well as after the game, there is a detailed summary of all statistics which looks exactly like a print out in the newspaper. With this game you can even keep a running total of all the statistics for a given number of teams which can be dumped to a printer. If only it had graphics this entry would be fantastic. You are not likely to find ***3-in-1 FOOTBALL*** at your dealer as Lance Haffner Games is a small company. The address for those interested is: LANCE HAFFNER GAMES, P.O. BOX 100594, NASHVILLE, TN 37210.

-- Graham Smith, A.C.E. Vice-President

FADER

(reprint: Page 6, no. 26)

Degas Fading Slide Show provides a continuous slide-show of all ***Degas*** format pictures on a disk fading each into view in a similar manner to several such programs available for the Atari 8-bit systems.

The program will automatically select only those pictures corresponding to the resolution in which the program is run provided the standard ***Degas*** extenders are used. If there are no files on the disk matching the screen resolution, the program will return to the desktop. Otherwise it will display all pictures in a continuous loop.

The ... listing can be typed in using ST BASIC and will generate the appropriate object code which can be run in the normal way....

Note: FADER will only run with 512k machines. Owners of 1 megabyte machines should first run MAK512.TOS or a similar program from your local user group....

```
10 rem ******************************************
20 rem *
30 rem *    Degas Fading Slide Show
40 rem *        by Paul Lay
50 rem *
60 rem ******************************************
70 fullw 2: clearw 2: gotoxy 0,0
80 ? " Degas Fading Slide Show": ? " by Paul Lay": ?
90 ? " Insert destination disk & press any key";
100 key$=input$(1): ?: ?: ? " *** Creating File 'A:FADER.PRG'"
110 on error goto 210
120 open "R", #1, "A:FADER.PRG", 1
130 field #1, 1 as byte$
140 on error goto 220
150 checksum%=0: for rec%=1 to 463
160 read code%: checksum%=checksum%+code%
170 lset byte$=chr$(code%): put #1,rec%
180 next rec%: close #1
190 if checksum%<>26660 then 220
200 ? " *** Creation successful": end
```

```
210 ? " *** Error opening file": end
220 ? " *** Error in data statements": end
230 data 96 , 26, 0 , 0 , 1 , 168 , 0 , 0
240 data 0 , 0 , 0 , 0 , 0 , 0 , 0 , 0
250 data 0 , 0 , 0 , 0 , 0 , 0 , 0 , 0
260 data 0 , 0 , 0 , 0 , 42 , 79 , 46 , 124
270 data 0 , 6 , 128 , 0 , 42 , 109 , 0 , 4
280 data 32 , 45 , 0 , 12 , 208 , 173 , 0 , 20
290 data 208 , 173 , 0 , 28 , 6 , 128 , 0 , 0
300 data 1 , 0 , 47 , 0 , 47 , 13 , 63 , 60
310 data 0 , 0 , 63 , 60 , 0 , 74 , 78 , 65
320 data 223 , 252 , 0 , 0 , 0 , 12 , 63 , 60
330 data 0 , 6 , 63 , 60 , 0 , 26 , 78 , 78
340 data 88 , 143 , 63 , 60 , 0 , 4 , 78 , 78
350 data 84 , 143 , 209 , 57 , 0 , 0 , 1 , 122
360 data 47 , 60 , 0 , 0 , 1 , 124 , 63 , 60
370 data 0 , 26 , 78 , 65 , 92 , 143 , 63 , 60
380 data 0 , 0 , 47 , 60 , 0 , 0 , 1 , 118
390 data 63 , 60 , 0 , 78 , 78 , 65 , 80 , 143
400 data 74 , 64 , 102 , 0 , 0 , 130 , 63 , 60
410 data 0 , 0 , 47 , 60 , 0 , 0 , 1 , 154
420 data 63 , 60 , 0 , 61 , 78 , 65 , 80 , 143
430 data 51 , 192 , 0 , 0 , 1 , 116 , 47 , 68
440 data 0 , 6 , 255 , 222 , 47 , 60 , 0 , 0
450 data 125 , 34 , 63 , 57 , 0 , 0 , 1 , 116
460 data 63 , 60 , 0 , 63 , 78 , 65 , 223 , 252
470 data 0 , 0 , 0 , 12 , 63 , 57 , 0 , 0
480 data 1 , 116 , 63 , 60 , 0 , 62 , 78 , 65
490 data 88 , 143 , 63 , 60 , 0 , 37 , 78 , 78
500 data 84 , 143 , 97 , 0 , 0 , 156 , 47 , 60
510 data 0 , 6 , 255 , 224 , 63 , 60 , 0 , 6
520 data 78 , 78 , 92 , 143 , 97 , 50 , 60 , 60
530 data 1 , 0 , 63 , 60 , 0 , 37 , 78 , 78
540 data 84 , 143 , 81 , 206 , 255 , 246 , 63 , 60
550 data 0 , 79 , 78 , 65 , 84 , 143 , 74 , 64
560 data 103 , 132 , 102 , 0 , 255 , 92 , 63 , 60
570 data 0 , 6 , 63 , 60 , 0 , 27 , 78 , 78
580 data 88 , 143 , 63 , 60 , 0 , 0 , 78 , 65
590 data 60 , 60 , 127 , 255 , 63 , 60 , 0 , 17
600 data 78 , 78 , 84 , 143 , 2 , 64 , 127 , 255
610 data 32 , 124 , 0 , 7 , 0 , 0 , 34 , 124
620 data 0 , 7 , 128 , 0 , 50 , 60 , 0 , 4
630 data 19 , 176 , 0 , 0 , 0 , 0 , 6 , 128
640 data 0 , 0 , 0 , 890 , 2 , 1289 , 0 , 0
650 data 127 , 255 , 81 , 201 , 255 , 236 , 81 , 206
660 data 255 , 204 , 48 , 60 , 7 , 255 , 32 , 124
670 data 0 , 7 , 0 , 0 , 34 , 124 , 0 , 7
680 data 128 , 0 , 34 , 216 , 34 , 216 , 34 , 216
690 data 34 , 216 , 81 , 200 , 255 , 246 , 78 , 117
700 data 48 , 60 , 7 , 255 , 32 , 124 , 0 , 7
710 data 128 , 0 , 66 , 152 , 66 , 152 , 66 , 152
720 data 66 , 152 , 81 , 200 , 255 , 246 , 78 , 117
730 data 0 , 0 , 0 , 0 , 0 , 0 , 0 , 0
740 data 0 , 0 , 0 , 0 , 0 , 0 , 0 , 0
750 data 0 , 0 , 0 , 0 , 0 , 0 , 0 , 0
760 data 0 , 0 , 0 , 0 , 0 , 0 , 0 , 0
770 data 0 , 0 , 0 , 0 , 0 , 0 , 0 , 0
780 data 0 , 0 , 0 , 0 , 0 , 0 , 0 , 0
790 data 0 , 0 , 0 , 0 , 0 , 0 , 0 , 72
800 data 6 , 18 , 24 , 14 , 18 , 18 , 0
```

-- Paul Lay

ICON SHOP

(Reprint: WAND, Jan., 1987)

Every once in a while something comes along which is an immediate success. ***Print Shop*** is such a program. It has some limitations, as does everything. The graphic editor is cumbersome, and does not have many options. In the ***Print Shop Companion***, Broderbund has supplied a new graphic editor which overcomes many of these shortcomings.

Now along comes ***Icon Shop*** . A TERRIFIC, very powerful, very user friendly, PUBLIC DOMAIN Print Shop editor, by Gregg Tavares. I downloaded it from GEnie. I found out it is also on CompuServe together with the documentation file.

This editor is VERY different in many ways. Here are some of the highlilghts: 1. Windows. There are 20 small windows appearing on the right side of the screen and 5 along the bottom. You point to any desired window for the desired function, using the joystick. You can also use the keyboard because the windows are numbered. Press the number for the function. 2. Programmable Patterns. The first 8 windows contain the colors black and white and 6 patterns. But hre is a very clever and powerful new feature. The pattern windows are each made up of pixels in a 6x8 grid. Any one or more of these windows can be changed one pixel at a time, like using a font editor. The changed windows are given a file name and saved on a disk. They can be called back and forth for use at will and the graphic you are working on in memory is not lost. I stayed up late one night and made about 30 different patterns. These are good for fill and background, etc. 3. The usual Draw, Rubber-band, Open Rectangle, Circle and Fill functions are present. 4. Solid Rectangle or Box. Solid Circle or Oval. This is an excellent way to delete a large portion of a graphic. Put the solild box (or circle) over the part to delete; use color black or white and press the button. The area is now all white or black. 5. Capture. This is a move rectangle function. You enclose a rectangle and then move the rectangle to anywhere, even on top of previously drawn material. 6. Mirrors. Very powerful. Choice of right or left, upper or lower, or all 4 directions. The mirror function works with ALL the others. 7. Plot Type. Normal. Inverse. ANDed, which logically "ANDs" the color under the pointer with the selected color. ORed, which logically "ORs" the color under the pointer with the selected color. EXclusive ORed which logically "EXclusive ORs" the color under the pointer with the selected color. 8. Undo and Clear. Undo undoes the last change made to the graphic. Clear wipes out the entire screen. It is possible to Undo an undo, or to undo a Clear. 9. Capture Options. Inverse. Horizontal Flip. Vertical Flip. These work with th Capture function #4 above. 10. 5 Bottom Windows. Load and Save use either keyboard or joystick. View: Directory in 2 columns. Very nicely done. Can highlight with joystick pointer or type the name from keyboard. Can use pointer to scroll up or down. Convert: Convert to DOS format. Format: Format disk in ***Print Shop*** format.

All in all, a fantastic ***Print Shop*** Editor. Now for some of the limitations: The main menu gives the choice of controller as Mouse, Koala Pad, or joystick. I cannot get the mouse or Koala Pad to work properly. The pointer only goes from the top of the screen about half way down and no further. The documentation has instructions relating to the drivers which were done with the ***Atari Macro Assembler***, but this is over my head. I will be very happy to hear from someone who makes the patches to get the Koala Pad and/or mouse to work.

The ***Print Shop Companion*** editor has a very simple way to move the graphic to the right or left and up or down. This

function is not present in ***Icon Shop***. Also there is no Text option. Lettering has to be done pixel by pixel. Of course, one can have the best of both worlds by doing everything which is easy with one editor and then loading the graphic into the other and completing the job.

If you are planning to make or modify ***Print Shop*** graphics, learn to use both editors and take advantage of the best features of each. Download ICONSHOP from GEnie or CompuServe. If you do not subscribe to either of these networks, get it from your local public domain library.

-- Rolly Herman

MORERAM XL

(Reprint: Starbase, February, 1987)

WARNING: This hardware modification should be attempted only by those who have had some experience working with electronic boards and integrated circuits. If you are not confident of your abilities, ask for assistance from your user group or a good computer/TV/VCR technician.

The object of this change is to enable the RAM at location $D600 through $D7FF (512 bytes) which cannot normally be accessed. The RAM chips are on the bus during each machine cycle unless the -CI line from pin 16 of U3 (MMU) is "low". This upgrade's added circuit forces this line "on" during access to $D600 through $D7FF addresses, which is all that's required to use the existing memory in this location.

Disassemble your 800XL by removing the 6 Phillips head screws from the bottom of the case. Carefully lift the right side upwards (with it still lying on its keyboard) as if you were opening a book.

Disconnect the keyboard cable and set the top section aside. Remove all the screws from the main board and work it loose from the base. Take note of the location and sequence of the shielding while you are pulling it apart. Now to the fun part....

Find the trace connecting pin 16 of U3 to pin 10 of U18. At a suitable location, completely cut through this line. Then, use a small piece of double sided foam tape to secure a 74HC20 IC to a clear area of the main board near U2 (74LS138). Mount the chip on its back so the pins point upward. (Make sure you know which is pin #1!!) Using 30 guage wire-wrapping wire, connect pin 7 to the nearest ground (pin 8 of U2 will do) and pin 14 to a nearby +5v point (pin 16 of U2). Wire pins 1,2 4 and 5 of the HC20 to pin 16 of U3 (MMU). Solder a wire from pin 6 (of HC20) to pins 9 and 10 of HC20. Add a wire from pin 12 of HC20 to pin 9 of U2 (LS138) and from pin 13 (HC20) to pin 7 of U2 (LS138). The last wire goes from pin 8 (HC20) to pin 10 of U18 (LS08).

ALL DONE! Try the board now, before you put it back together. Just plug in the power and monitor plugs and boot BASIC. If it shows "READY", it is ok. If it does not work, check your changes very carefully. If all else fails, you can remove the additions and solder a wire from U3, pin 16 to U18, pin 10 -- this will return the board to normal. Now, you can put everything back together and try the memory at $D600 - $D7FF. You now have 512 bytes all for your own use!!

For 1200XL owners: Cut the trace between pin 16 of U14 and pin 1 of U11. Mount the HC20 near U16. Pin 16 of U1 goes to pins 1, 2, 4 and 5. Pins 12 and 13 of the HC20 go to pins 9 and 7 of U18. Pin 8 of HC20 goes to pin 1 of U11. All that really changes (compared to the 800XL) are the IC numbers and one of the pins (pin 10 of U18 becomes pin 1 of U11).

-- Bob Woolley

Best of Ace ST #2

This disk has many arced/compressed files on it to give you, our customer, more value for your money. For you beginning computer users, READ the READ.ME FILE to dearc the files. For you advanced users, try dcopy. You will find it faster and easier to use than arcx or arc.ttp. Believe me, ITS TRUE!!

READ.ME - files to get you started dearcing the files on this disk. To get full use out of dcopy read the full dcopy text file.!!!
\ARCA - faster more efficient ARCing utility about 3 to 4 times faster than arc, and usually genetates a file 10% smaller than arc.
\ETERNAL - reset proof ram disk, can be resized without resetting the computer
\OPENINGS - openings for the krabat chess program below
\PICTURES.COL - color pictures for the krabat chess program.
DARKSCRN.ACC - click on and it turns your screen off immediatly until you press any key.
DCOPY18.PRG - a fantastic utility to shorten most things you do!!!!!! This program has been used extensively by pro's and novices alike. It was programed by our own Ralph Walden and is Shareware. If you find it usefull, please send a donation.
DCOPY18.TXT - docs for above READ THEM TO FULLY USE THIS UTILITY !!!!!!!! Or you'll be sorrrrrrrryyyyyy.
DISCAT.ARC - keep track of your disks and print labels with this program
KRABAT.PRG - NOTE: there are three files plus the two folders above. This excellent chess program can be run as either color or mono. We have it set up for color. If you wish to run it on mono, create a folder called pictures.bw, and copy all the files from color to .bw.
MEGABLT2.ARC - a public domain drawing program that is supposed to be continually updated by the author. If you don't have one, this is a good one.
SPACRAID.ARC - this is a French version of space invaders. For a public domain program this is tops. Merci! The kids will love to play this very colorful game (how many waves can you survive?)
STARTUP.ARC - allows you to run any number of files from any folder or any drive on boot up.
TNYVIEW2.ARC - an upgraded version of the origional program, gives you variable viewing times.
TURTLE28.ARC - If this sounds too glowing, tough. This really is the best and fastest hard disk back-up out there. We highly recommend it.
VISCALC.ARC - this is a public domain spreadsheet ported over from unix. It is similar to Visicalc and Lotus 1-2-3
WINDOW.ARC - this is a program version of a pong/breakout game. The kids'll love it.

```
0 REM "******************************
"
1 REM "*          BERTIE            *
"
2 REM "*             by             *
"
3 REM "*      Michael  Kempster     *
"
4 REM "* ---------------------------- *
"
5 REM "* PAGE 6 MAGAZINE - ENGLAND *
"
6 REM "******************************

10 ? CHR$(125):POKE 82,0:POKE 752,1:
POKE 710,0:GOSUB 30000
15 POKE 559,0:REM "SET UP DISPLAY LI
ST"
20 RESTORE 30:DL=PEEK(560)+PEEK(561)
*256:POKE DL+3,71:FOR I=6 TO 24:READ
 A:POKE DL+I,A:NEXT I
30 DATA 7,6,6,2,2,4,4,4,4,4,4,2,6,
6,7,7,2,65
40 POKE DL+25,PEEK(560):POKE DL+26,P
EEK(561):POKE 708,119:POKE 709,15
50 POKE 710,0:POKE 711,60:POKE 756,C
HSET:? CHR$(125):POSITION 2,0
60 ? "PARAMOUNTAIN":POSITION 30,0:?
"software":POSITION 6,1:? "presents"
:POKE 752,1:POKE 559,34
80 RESTORE 500:FOR ROW=4 TO 10:FOR C
OL=5 TO 34:READ A:IF A=7 OR A=8 THEN
 A=A+128
90 IF A=0 THEN A=64
100 POSITION COL,ROW:? CHR$(A+96):NE
XT COL:NEXT ROW
110 POSITION 9,12:? "by":POSITION 2,
13:? "michael kempster"
120 POSITION 4,14:? "PLEASE WAIT LOA
DING MAIN PROGRAM"
150 POKE 87,2:RUN "D:BERTIE.2"
199 END
500 REM "DATA FOR BERTIE TITLE SCREE
N"
510 DATA 0,5,5,5,0,0,5,5,5,0,0,5,5,5
,0,0,5,5,5,0,0,5,5,5,0,0,5,5,5,0
520 DATA 6,3,1,1,2,6,3,1,1,2,6,3,1,1
,2,6,3,1,1,2,6,3,1,1,2,6,3,1,1,2
530 DATA 6,1,7,7,7,6,1,7,7,7,6,1,7,7
,7,0,4,7,7,7,0,4,7,7,7,6,1,7,7,7
540 DATA 6,1,7,0,7,6,1,7,2,0,6,1,7,0
,7,0,6,1,7,0,0,6,1,7,0,6,1,7,2,0
550 DATA 6,1,7,7,8,6,1,7,7,0,6,1,7,7
,8,0,6,1,7,0,0,9,1,7,0,6,1,7,7,0
560 DATA 6,1,7,0,7,6,1,7,1,2,6,1,7,1
,7,0,6,1,7,0,6,3,3,7,2,6,1,7,1,2
570 DATA 0,4,7,7,7,0,4,7,7,7,0,4,7,4
,7,0,0,4,7,0,0,4,7,7,7,0,4,7,7,7
30000 REM "REDEFINE CHARACTERS"
30010 CHSET=PEEK(106)-8:CH=256*CHSET
:DIM CHAR$(70):RESTORE 30300
30020 POSITION 14,10:? "PLEASE WAIT"
:POSITION 14,12:? "CHARACTER:"
30030 CHAR$="!#$%&'():ABCDEFGHIKLMNO
PRSTUVWY0123456789abcdefghi*+,[]"
30040 FOR I=1 TO LEN(CHAR$)
30050 CHPOS=CH+(ASC(CHAR$(I))-32)*8:
IF ASC(CHAR$(I))>96 THEN CHPOS=CH+(A
SC(CHAR$(I)))*8
30060 FOR A=0 TO 7:READ B:POKE CHPOS
+A,B:NEXT A:POSITION 24,12:? CHAR$(I
,I)
30070 NEXT I:RETURN
30300 REM "DATA FOR GRAPHICS CHARS."

30310 DATA 0,3,13,53,53,53,61,15,0,2
55,85,85,85,85,85,255
30320 DATA 0,240,92,87,87,87,95,255,
51,12,51,12,51,12,51,12
30330 DATA 63,63,63,63,63,63,63,63,5
1,12,51,12,15,3,3,0
30340 DATA 0,0,0,0,0,0,63,0,63,63,63
,60,60,48,240,0
30350 DATA 0,0,12,12,0,12,12,0,0,28,
62,119,127,119,119,119
30360 DATA 0,126,115,126,127,115,127
,126,0,63,112,112,112,127,127,63
30370 DATA 0,126,115,115,115,127,127
,126,0,127,112,124,112,127,127,127
30380 DATA 0,127,112,124,112,112,112
,112,0,63,112,112,119,115,127,62
30390 DATA 0,119,119,127,127,127,119
,119,0,127,28,28,28,127,127,127
30400 DATA 0,115,119,126,124,126,119
,115,0,96,96,96,96,127,127,127
30410 DATA 0,99,127,127,127,107,99,9
9,0,115,123,127,127,119,115,115
30420 DATA 0,62,119,119,119,127,127,
62,0,126,115,127,126,112,112,112
30430 DATA 0,126,115,127,126,119,119
,119,0,63,127,112,126,7,127,126
30440 DATA 0,127,127,28,28,28,28,28,
0,119,119,119,119,127,127,62
30450 DATA 0,119,119,119,119,127,62,
28,0,99,99,107,127,127,127,99
30460 DATA 0,119,119,127,28,28,62,62
,0,63,51,51,63,63,63,63
30470 DATA 0,12,60,12,12,12,63,63,0,
63,63,3,63,48,63,63
30480 DATA 0,63,63,3,15,3,63,63,0,51
,51,51,63,63,3,3
30490 DATA 0,63,63,48,63,3,63,63,0,6
3,63,48,63,51,63,63
30500 DATA 0,63,63,3,3,3,3,3,0,63,63
,51,63,51,63,63
30510 DATA 0,63,63,51,63,3,63,63,85,
85,85,85,85,85,85,85
30520 DATA 128,128,96,96,88,88,86,86
,149,149,101,101,89,89,86,86
30530 DATA 149,149,37,37,9,9,2,2,0,0
,0,0,0,0,170,170
30540 DATA 2,2,2,2,2,2,2,2,255,255,2
55,255,255,255,255,255
30550 DATA 255,252,240,224,216,248,2
54,255,2,2,2,2,2,2,170,170
30560 DATA 0,3,14,58,58,58,62,15,0,2
55,170,170,170,170,170,255
30570 DATA 0,240,172,171,171,171,175
,255,0,0,48,12,255,12, 48,0
30580 DATA 0,0,12,48,255,48,12,0
30590 REM "FINISH - PART ONE"
```

```
1 REM "******************************
"
2 REM "*    BERTIE - MAIN PROGRAM   *
"
3 REM "*             by             *
"
4 REM "*      Michael  Kempster     *
"
5 REM "* ---------------------------- *
"
6 REM "*          AUG 1985          *

7 REM "******************************

10 GRAPHICS 0:CHSET=PEEK(106)-8:POKE
 710,0:POKE 756,CHSET:GOSUB 20000:LE
V=1
20 LI=3:SC=10:S$="00010":HI$="00500"

30 GOSUB 13000:GOSUB 14000
40 POSITION 23,0:? " [ SCREEN:";LEV;
" ]":POSITION (X-50)/4,(Y-38)/8:? "*
+,":FOR N=1 TO 300:NEXT N
50 GOSUB 100:POKE 707,0:X1=TX:Y1=TY:
GOSUB 200:TX=X1:TY=Y1:MC=USR(1568,3,
TX,TY,6):GOSUB 90:GOSUB 96
60 GOSUB 100:X1=IX:Y1=IY:GOSUB 200:I
X=X1:IY=Y1:POKE 707,15:MC=USR(1568,2
,IX,IY,5-FR):GOSUB 90:FR=FR+1
65 IF FR>1 THEN FR=0
70 GOSUB 96:GOTO 50
90 IF (X=TX+1 AND Y=TY-6) OR (X=IX A
ND Y=IY) THEN POP :GOTO 400
91 IF PEEK(764)<>255 OR PEEK(53279)=
3 THEN POKE 764,255:GOTO 700
95 RETURN
96 SOUND 0,100,10,10:FOR N=1 TO 15:N
```

```
EXT N:SOUND 0,0,0,0:RETURN
100 REM MOVE MAN
105 X1=X:Y1=Y:S=STICK(0):Z=0
110 IF S=11 THEN X1=X1-16:GOTO 170
120 IF S=7 THEN X1=X1+16:GOTO 170
130 IF S=6 THEN X1=X1+4:Y1=Y1-16:GOT
O 170
140 IF S=5 THEN X1=X1+12:Y1=Y1+16:GO
TO 170
150 IF S=10 THEN X1=X1-12:Y1=Y1-16:G
OTO 170
160 IF S=9 THEN X1=X1-4:Y1=Y1+16
170 IF X1)50 THEN LOCATE (X1-50)/4,(
Y1-38)/8,Z:IF Z=42 OR Z=33 THEN X=X1
:Y=Y1
180 IF X1)50 THEN SOUND 0,200,10,10:
FOR N=1 TO 20:NEXT N:SOUND 0,0,0,0:I
F Z=33 THEN GOSUB 300
190 MC=USR(1568,0,X,Y,0+FR):MC=USR(1
568,1,X,Y,2+FR):RETURN
200 REM MOVE THINGS
210 IF X(=X1 AND Y(Y1 THEN X2=-12:Y2
=-16:GOSUB 270
220 IF X)=X1 AND Y(Y1 THEN X2=4:Y2=-
16:GOSUB 270
230 IF X(=X1 AND Y)Y1 THEN X2=-4:Y2=
16:GOSUB 270
240 IF X)=X1 AND Y)Y1 THEN X2=12:Y2=
16:GOSUB 270
250 IF X)X1 THEN X2=16:Y2=0:GOSUB 27
0
260 IF X(X1 THEN X2=-16:Y2=0:GOSUB 2
70
270 LOCATE INT(X1+X2-50)/4,INT(Y1+Y2
-38)/8,Z:IF Z=42 OR Z=33 THEN X1=X1+
X2:Y1=Y1+Y2:POP :RETURN
280 RETURN
300 REM COLOR CHANGE
305 MC=USR(1568,0,X,Y,0):MC=USR(1568
,1,X,Y,2)
310 SC=SC+10*LEV:S$(6-LEN(STR$(SC)),
5)=STR$(SC):POSITION 30,7:? S$:IF HI
$(S$ THEN HI$=S$:POSITION 30,4:? HI$

320 POSITION (X-50)/4,(Y-38)/8:? "%+
,":FOR N=5 TO 10:SOUND 0,100*N,10,10
:NEXT N:SOUND 0,0,0,0
330 DON=DON+1:IF DON=AMO THEN POP :G
OTO 600
340 RETURN
400 REM LOSE LIFE
410 FOR N=1 TO 3:MC=USR(1568,N,0,0,0
):NEXT N:MC=USR(1568,0,X,Y,0):POKE 6
23,5:FOR A=1 TO 9
420 FOR N=9 TO 1 STEP -1:POKE N+PM,P
EEK(PM+N-1):POKE PM+A-1,0:NEXT N:MC=
USR(1568,0,X,Y,0)
13060 GOSUB 18000:DON=1:FR=0
13070 RESTORE 14600+LEV*500:READ X,Y
,IX,IY,TX,TY,AMO:RETURN
14000 REM PRINTUP
14010 SOUND 0,100,10,6:SOUND 1,200,1
0,10:POKE 53768,13:FR=0
14020 POSITION 22,0:? "[ PRESS START ]":POKE 707,0:FOR A=1 TO 75:NEXT A
:MC=USR(1568,0,X,Y,0+FR)
14030 MC=USR(1568,1,X,Y,2+FR):MC=USR
(1568,2,IX,IY,5-FR):MC=USR(1568,3,TX
,TY,6):FR=FR+1:IF FR)1 THEN FR=0
14040 POKE 707,15:POSITION 22,0:? "
 PRESS START ":FOR A=1 TO 75:NEXT
A
14050 IF PEEK(53279)=6 OR STRIG(0)=0
 THEN SOUND 0,0,0,0:SOUND 1,0,0,0:FR
=0:RETURN
14060 GOTO 14020
15000 REM 1ST SCREEN ROUTINE
15010 DATA 9,0,11,4,1,10,6,2,9,8,3,8
,10,4,7,12,5,6,14,6,5,16,7,4,18,8,3,
20
15100 DATA 95,67,191,195,62,201,45
15500 REM 2ND SCREEN ROUTINE
15510 DATA 12,1,11,4,1,10,6,2,9,8,5,
0,10,2,3,12,1,19,12,1,6,14,3,22,14,2
,5,16,2,21,16,7,4,18,7,7,20
15600 DATA 111,67,79,195,50,121,46
16000 REM 3RD SCREEN ROUTINE
16010 DATA 17,1,11,4,1,10,6,2,9,8,5,
0,10,1,3,12,0,15,12,0,23,12,1,2,14,0
,14,14,2,26,14,1,1,16,1,13,16
16020 DATA 2,25,16,1,0,18,1,12,18,3,
24,18,8,3,20
16100 DATA 111,67,187,147,50,121,47
16500 REM 4RD SCREEN ROUTINE
16510 DATA 18,1,11,4,1,10,6,0,9,8,0,
17,8,2,0,10,1,16,10,0,3,12,3,11,12,8
,2,14,0,1,16,2,9,16,0,25,16
16520 DATA 0,33,16,0,0,18,2,8,18,1,2
4,18,0,36,18,8,3,20
16600 DATA 111,67,187,147,50,121,47
17000 REM "5TH SCREEN ROUTINE
17010 DATA 14,0,11,4,1,10,6,2,9,8,5,
0,10,4,3,12,0,2,14,5,14,14,0,1,16,1,
17,16,0,33,16,0,0,18,1,16,18
17020 DATA 0,36,18,8,3,20
17100 DATA 95,67,187,147,78,201,41
17500 REM "6TH SCREEN ROUTINE
17510 DATA 16,1,11,4,0,14,6,1,9,8,4,
0,10,0,3,12,2,11,12,0,2,14,3,10,14,0
,30,14,0,1,16,2,9,16,1,25,16
17520 DATA 0,0,18,2,8,18,1,28,18,8,3
,20
17600 DATA 95,67,191,195,50,185,41
18000 REM "SCREEN PRINTUP
430 SOUND 0,50+A*10,8,10:NEXT A:SOUN
D 0,0,0,0:MC=USR(1568,0,0,0,0):GOSUB
 20040
440 POSITION (X-50)/4,(Y-38)/8:? "*"
:LI=LI-1:IF LI=0 THEN 500
450 POKE 623,1:GOSUB 13070:MC=USR(15
68,0,X,Y,0):MC=USR(1568,1,X,Y,2):MC=
USR(1568,2,IX,IY,4)
460 MC=USR(1568,3,TX,TY,6):FOR N=1 T
O 200:NEXT N:POSITION 35,10:? CHR$(3
0);LI:GOTO 50
500 REM GAME OVER
510 POSITION (X-50)/4,(Y-38)/8:? "*"
:POSITION 25,0:? "gAmE oVeR":RESTOR
E 550:FOR N=1 TO 8:READ A,B
520 SOUND 0,A,10,10:FOR C=1 TO B*4:N
EXT C:FOR C=5 TO 0 STEP -1:SOUND 0,A
,10,C:NEXT C:NEXT N
530 FOR N=1 TO 100:NEXT N:SC=10:S$="
00010":LI=3:DON=1:GOTO 30
550 DATA 171,15,227,7,227,5,203,15,2
27,20,0,1,179,12,171,15
600 REM NEXT SCREEN
610 POSITION (X-50)/4,(Y-38)/8:? "*"
:SOUND 0,100,10,10:SOUND 1,200,10,10
:SOUND 2,150,10,10:POKE 53768,13
620 POSITION 21,0:? "[sCrEeN cOmPlEtEd]":FOR A=1 TO 500:NEXT A:FOR N=0 T
O 3:SOUND N,0,0,0
630 MC=USR(1568,N,0,0,0):NEXT N:LEV=
LEV+1:IF LEV)6 THEN LEV=1
640 GOSUB 13000:GOTO 40
700 REM PAUSE AND ABORT
710 IF PEEK(53279)=3 THEN FOR N=0 TO
 3:MC=USR(1568,N,0,0,0):NEXT N:GOTO
750
720 IF PEEK(764)=255 THEN 720
730 POKE 764,255:RETURN
750 ? CHR$(125):POSITION 25,0:? "GAM
E ABORT":FOR N=1 TO 400:NEXT N:GOTO
30
13000 REM SCREEN DLI
13010 POKE 559,0:DL=PEEK(560)+PEEK(5
61)*256:POKE DL+3,70:POKE DL+6,6:FOR
 A=7 TO 28:POKE DL+A,4:NEXT A
13020 POKE DL+29,65:POKE DL+30,PEEK(
560):POKE DL+31,PEEK(561):POKE 623,1
:POKE 559,58:POKE 82,0:? CHR$(125)
13030 POKE 708,118:POKE 709,30:POKE
710,15:POKE 711,60:POSITION 7,0:? "B
ERTIE":POSITION 0,3
13040 ? "CHANGE TO":POSITION 2,5:? "
[@%+,]":POSITION 20,4:? "HIGHSCORE:";
HI$
13050 POSITION 24,7:? "SCORE:";S$:PO
SITION 28,10:? "LIVES:";LI:POSITION
3,6:? "'()":POKE 752,1
```

```
18010 RESTORE 14500+LEV*500:READ NL:
FOR N=1 TO NL:READ AM,CX,CY:FOR A=0
TO AM:POSITION CX+A*4,CY:? "!#$"
18020 POSITION CX+A*4,CY+1:? "% &":P
OSITION CX+A*4,CY+2:? "'()":NEXT A:N
EXT N:RETURN
20000 REM INITIALISE M/C - PMG
20010 POKE 752,1:POSITION 14,2:? "PL
EASE WAIT":PMST=PEEK(106)-16:PM=PMST
*256:RESTORE 20200:FOR A=1536 TO 175
8
20020 READ B:POKE A,B:NEXT A:POKE 54
279,PMST:POKE 704,15:POKE 705,56:POK
E 706,10:POKE 53277,2
20030 POSITION 14,2:? "ALMOST DONE":
MC=USR(1536,PMST):DIM S$(5),HI$(5):P
OKE 559,58
20040 RESTORE 20300:FOR A=0 TO 6:FOR
 B=0 TO 9:READ C:POKE PM+A*16+B,C:NE
XT B:NEXT A:RETURN
20199 REM DATA M/C
20200 DATA 104,104,104,141,218,6,24,
105,4,141,219,6,169,0,162,3,157,200,
6,202,16,250,169,7,162,6,160,67,32
20210 DATA 92,228,96,169,1,141,220,6
,104,104,104,170,104,104,157,208,6,1
04,104,157,212,6,104,104,157,204,6
20220 DATA 169,1,157,200,6,169,0,141
,220,6,96,173,220,6,240,3,76,98,228,
162,3,189,200,6,208,6,202,16,248,76
20230 DATA 98,228,142,216,6,169,0,15
7,200,6,141,221,6,189,204,6,201,16,1
6,21,189,204,6,10,10,10,10,133,205
20240 DATA 173,221,6,24,109,218,6,13
3,206,76,152,6,173,221,6,24,105,1,14
1,221,6,189,204,6,56,233,16,157,204
20250 DATA 6,201,16,48,213,76,127,6,
173,219,6,24,109,216,6,133,204,169,0
,133,203,160,255,145,203,136,208,251

20260 DATA 189,212,6,133,203,160,0,1
77,205,145,203,200,192,16,208,247,17
4,216,6,189,208,6,157,0,208,24,144
20270 DATA 131,0,0,0,0,0,0,0,0,0,0,0
,0,0,0,0,0,0,0,0,0,0,0,0,192,208,224
,240,0,0,0,0,0,0,0,0
20299 REM DATA FOR PMG
20300 DATA 0,55,73,137,137,157,98,12
6,36,198,55,73,137,137,157,98,126,36
,68,130
20310 DATA 0,0,0,18,54,34,0,0,0,0,0,
0,18,54,34,0,0,0,0,0,0
20320 DATA 0,0,102,187,153,102,189,6
6,36,231,102,187,153,102,189,66,36,3
6,66,129,0,62
20330 DATA 127,127,127,62,0,0,0,0
20340 REM FINISHED!!
```

```
1 REM ODD MAN OUT SERIES-ODDS&EVENS
2 REM "REV.0.1"
3 REM 26.1.83
4 REM ******************************
10 GOSUB 32000:R=0:WR=0:DIM C$(4),N(
4):GOTO 31000
999 DL=PEEK(560)+256*PEEK(561):RETUR
N
1000 POKE 756,CB:POKE 708,140:POKE 7
09,222:POKE 710,92:POKE 711,14:POKE
712,196:POSITION 8,0:? #6;"odds"
1010 FOR W=1 TO 4:N(W)=0:NEXT W:R=IN
T(RND(0)*4)+1:C=R
1020 RR=INT(RND(0)*999)+1:N(R)=RR:IF
 RR/2<>INT(RR/2) THEN 1020
1100 IF N(1)>0 THEN 1110
1105 N(1)=INT(RND(0)*999)+1:IF N(1)/
2=INT(N(1)/2) THEN 1105
1110 IF N(2)>0 THEN 1120
1115 N(2)=INT(RND(0)*999)+1:IF N(2)/
2=INT(N(2)/2) THEN 1115
1120 IF N(3)>0 THEN 1130
1125 N(3)=INT(RND(0)*999)+1:IF N(3)/
2=INT(N(3)/2) THEN 1125
1130 IF N(4)>0 THEN 1999
1135 N(4)=INT(RND(0)*999)+1:IF N(4)/
2=INT(N(4)/2) THEN 1135
1999 C$="odd":GOSUB 6000
2000 POKE 756,CB:POKE 708,222:POKE 7
09,140:POKE 710,92:POKE 711,14:POKE
712,132:POSITION 8,0:? #6;"evens"
2010 FOR W=1 TO 4:N(W)=0:NEXT W:R=IN
T(RND(0)*4)+1:C=R
2020 N(R)=INT(RND(0)*999)+1:IF N(R)/
2=INT(N(R)/2) THEN 2020
2100 IF C=1 THEN 2110
2105 N(1)=INT(RND(0)*999)+1:IF N(1)/
2<>INT(N(1)/2) THEN 2105
2110 IF C=2 THEN 2120
2115 N(2)=INT(RND(0)*999)+1:IF N(2)/
2<>INT(N(2)/2) THEN 2115
2120 IF C=3 THEN 2130
2125 N(3)=INT(RND(0)*999)+1:IF N(3)/
2<>INT(N(3)/2) THEN 2125
2130 IF C=4 THEN 2999
2135 N(4)=INT(RND(0)*999)+1:IF N(4)/
2<>INT(N(4)/2) THEN 2135
2999 C$="even":GOSUB 6000
3000 POKE 710,202:POSITION 0,0:? #6;
"even numbers CAN BE DIVIDED EVENLY
BY 2 AND END IN          0,2,4,6 O
R 8"
3010 POSITION 0,5:? #6;"Odd numbers
CAN'T BEDIVIDED EVENLY BY 2 AND END
IN          1,3,5,7 OR 9"
3020 POSITION 1,11:? #6;"PRESS start
 BUTTON";:GOTO 31111
```

```
4000 POSITION 0,11:? #6;"
       ";
4005 POSITION 1,11:? #6;N((V-2)/2);"
 is correct";:ZZ=PEEK(712):FOR W=21
TO 7 STEP -1:POKE 712,(W-5)*15+12
4010 POSITION 21-W,V:? #6;" [\";:FOR
 WW=15 TO 0 STEP -1:SOUND 0,W,10,WW:
NEXT WW:NEXT W:POSITION 14,V:? #6;"
    ";
4090 POSITION 0,11:? #6;"
       ";
4999 POSITION H,V:? #6;"  ";:RI=RI+1
:ON G GOTO 1000,2000
5000 POSITION 0,11:? #6;"
       ";
5005 POSITION 0,11:? #6;"wrong ";N((
V-2)/2);" is ";C$;
5010 FOR W=70 TO 230 STEP 20:SOUND 0
,W,10,10:POSITION 10,C*2+2:? #6;"
":FOR WW=1 TO 35:NEXT WW:SOUND 0,0,0
,0:POSITION 10,C*2+2
5020 ? #6;N(C):FOR WW=1 TO 21:NEXT W
W:NEXT W:SOUND 0,23,4,15:FOR W=1 TO
77:NEXT W:SOUND 0,0,0,0
5090 POSITION 0,11:? #6;"
       ";
5999 POSITION H,V:? #6;"  ";:WR=WR+1
:ON G GOTO 1000,2000
6000 FOR W=1 TO 4:POSITION 10,W*2+2:
? #6;N(W);"  ";:NEXT W:POSITION H,V:
? #6;"[\":POKE 77,0:GOSUB 7010
6100 S=STICK(0):IF S=14 AND V>3 THEN
 POSITION H,V:? #6;"  ":V=V-1:POSITI
ON H,V:? #6;"[\"
6102 IF S=13 AND V<10 THEN POSITION
H,V:? #6;"  ":V=V+1:POSITION H,V:? #
6;"[\"
6110 IF STRIG(0)=0 THEN GOSUB 6200
6120 IF PEEK(764)=62 THEN POKE 764,2
55:GOSUB 7000
6199 FOR W=1 TO 35:NEXT W:GOTO 6100
6200 FOR W=2 TO 9:POSITION W,V:? #6;
"▲":SOUND 0,WW*3,8,14:FOR WW=1 TO 14:
NEXT WW:POSITION W,V:? #6;" ":NEXT W
:SOUND 0,0,0,0
6210 IF V/2<>INT(V/2) THEN RETURN
6220 SOUND 0,77,8,14:FOR W=10 TO 19:
POSITION W,V:? #6;"▮":SOUND 0,77,8,2
2-W:FOR WW=1 TO 14:NEXT WW:IF W<11 T
HEN 6230
6222 POSITION W-2,V:? #6;" "
6230 NEXT W:POSITION 18,V:? #6;" ":F
OR W=1 TO 14:NEXT W:POSITION 19,V:?
#6;" ":SOUND 0,0,0,0
6290 IF C=(V-2)/2 THEN 4000
6299 GOTO 5000
7000 IF XX=1 THEN XX=0:GOTO 7010
```

```
7005 XX=1
7010 IF XX=1 THEN POSITION 1,11:? #6
;RI;"right  ";WR;"wrong";:RETURN
7020 POSITION 0,11:? #6;"
     ";:RETURN
31000 POKE 708,222:POKE 709,142:POKE
 710,20:POKE 711,92:POKE 712,20
31010 ? #6;"K":GOSUB 999:POKE DL+6,7
:POKE DL+11,7:POSITION 0,1
31020 ? #6;"       HI        ";
31025 ? #6:? #6;"  AND WELCOME TO";
? #6:? #6:? #6;"   odd man out.";?
#6:? #6;"  odds or evens"
31030 ? #6:? #6:? #6:? #6;"   by [illegible]
 real":? #6:? #6:? #6:? #6:? #6;"
 ENTER YOUR NAME         NOW  PLEASE"
31040 INPUT N$:GRAPHICS 18:POKE 708,
222:POKE 709,142:POKE 711,92:POKE 71
2,20:OPEN #1,4,0,"K:":? #6;"HELLO ";
N$
31050 ? #6;"WILL YOU BE PLAYING":? #
6:? #6:? #6;"   Odds  OR  Evens"
:? #6:? #6:? #6:? #6;"  PRESS  O OR
E"
31060 GET #1,G:IF G=79 THEN G=1:GOTO
 31100
31061 IF G=69 THEN G=2:GOTO 31100
31069 GOTO 31060
31100 ? #6;"K":? #6;" PRESS select
FOR      INSTRUCTIONS":? #6:? #6:? #
6:? #6;"PRESS start TO START     THE
 GAME"
31105 H=0:V=10:RI=0:WR=0:XX=1
31110 IF PEEK(53279)=5 THEN 3000
31111 IF PEEK(53279)=6 THEN GRAPHICS
 18:GOSUB 999:POKE DL+6,6:POSITION 1
,1:? #6;"PICK THE WRONG ONE":ON G GO
TO 1000,2000
31112 GOTO 31110
32000 DIM PR$(50),N$(13):CB=PEEK(106
)-4:POKE 106,CB:PR$(1,41)="hh[illegible]"
32010 RESTORE 32760:GRAPHICS 1:Z=CB*
256:A=USR(ADR(PR$),Z,4):FOR W=Z+472
TO Z+511:READ D:POKE W,D:NEXT W:POKE
 756,CB
32099 RETURN
32760 DATA 255,128,48,32,127,213,127
,63,224,16,208,132,254,85,254,252
32761 DATA 129,72,19,128,68,19,164,6
9,0,0,0,170,85,0,0,0
32762 DATA 255,128,183,165,165,183,1
28,255
```

```
10 PRINT ,"  MOO  "
30 DIM A1(8),A(4),B(4),A$(4)
40 Y=0:T=255
50 PRINT :PRINT :PRINT
70 ?"Would you like the rules";:INP
UT A$
90 IF A$(1,1)="N" THEN 150
100 PRINT :PRINT "I am thinking of a
 four-digit number."
110 PRINT "Try to guess my number an
d I will giveyou clues as follows:"
120 PRINT "   COWS - Number of digit
s correct":? "          but in the w
rong position"
130 PRINT "   BULLS -Number of digit
s correct":? "          in the right
 position"
150 FOR I=1 TO 4
160 A(I)=INT(10*RND(1))
165 IF I-1=0 THEN 200
170 FOR J=1 TO I-1
180 IF A(I)=A(J) THEN 160
190 NEXT J
200 NEXT I
210 PRINT :PRINT "O.K. I have a numb
er in mind."
220 FOR I=1 TO 20
230 PRINT "GUESS #";I,
240 INPUT A$
245 IF LEN(A$)<>4 THEN 630
250 FOR Z=1 TO 4:A1(Z)=ASC(A$(Z,Z)):
NEXT Z
260 FOR J=1 TO 4
270 IF A1(J)<48 THEN 300
280 IF A1(J)>57 THEN 300
285 B(J)=A1(J)-48
290 NEXT J
295 GOTO 320
300 PRINT " What? "
310 GOTO 230
320 IF B(1)=B(2) THEN 650
325 IF B(1)=B(3) THEN 650
330 IF B(1)=B(4) THEN 650
335 IF B(2)=B(3) THEN 650
340 IF B(2)=B(4) THEN 650
345 IF B(3)=B(4) THEN 650
350 COWS=0:BULLS=0
360 FOR J=1 TO 4
370 IF J<>1 THEN IF A(J)=B(1) THEN C
OWS=COWS+1
380 IF J<>2 THEN IF A(J)=B(2) THEN C
OWS=COWS+1
390 IF J<>3 THEN IF A(J)=B(3) THEN C
OWS=COWS+1
400 IF J<>4 THEN IF A(J)=B(4) THEN C
OWS=COWS+1
410 NEXT J
```

```
460 FOR J=1 TO 4
470 IF A(J)=B(J) THEN BULLS=BULLS+1
480 NEXT J
520 PRINT COWS;" COWS",BULLS;" BULLS
"
530 IF BULLS=4 THEN 680
600 PRINT
605 NEXT I
610 PRINT "OH WELL"
615 PRINT "THAT'S TWENTY GUESSES.":P
RINT "MY NUMBER WAS ";A(1);A(2);A(3)
;A(4)
620 GOTO 700
630 PRINT "TRY GUESSING A FOUR DIGIT
 NUMBER.":GOTO 230
650 PRINT "OH I FORGOT TO TELL YOU T
HAT THE":PRINT "NUMBER I HAVE IN MIN
D HAS NO TWO"
660 PRINT "DIGITS THE SAME.":GOTO 23
0
680 PRINT "YOU GOT IT !!!":PRINT
690 Y=Y+1
700 ? "PLAY AGAIN (YES or NO)";:INPU
T A$
720 IF A$(1,1)="Y" THEN 150
730 IF Y=0 THEN 750
740 PRINT :PRINT "A ";Y;" POINT MOO
BUFF!!"
750 PRINT "HOPE YOU HAD FUN.  BYE."
999 END
```

MEETING
APRIL 8TH
WEDNESDAY
7:30 PM
SOUTH
EUGENE
HIGH

HOME-MADE 850

(Reprint: EACH, Jan., 1987)

Unlike most computer companies, when Atari designd its 8-bit machines it left out the RS232-C interfce to keep down the cost of the computer. To communicate with RS232-C peripherals, such as a modem or printer, requires an 850 interface, which retails for about $200; an expensive accessory. Other inerfaces are available with either a serial or parallel port, but usually not both. The "P/R Connection" does offer both, and retails for about $100. It is a cheaper alternative, but requires the loading of a software program to initialize the R: handler, and i may not always be compatible with other sofware used to run a modem and/or printer. The 850 interface is a computer in itself, containing a microprocessor and a built in ROM R: handler, and has extensive I/O capabilities. If the cost of an 850 could be reduced to less than $100 it might be th best unit to do the job.

THE $75 850 INTERFACE -- Some of the parts needed to build the interface must be ordered from the U.S., but the rest are available locally. The 850 bare board is available from American TV (check Antic or Analog for ads) for $10 US. You will receive a high quality double-sided Atari factory-original printed circuit board, a crystal (needed to control the microprocessor), and an instruction sheet. Also order two CO10750 (6532) PIA chips for $4.50 US each from the same company. The information sheet provides a complete listing of all the parts needed for 4 serial ports and one parallel port. At the end of the sheet is a list of the parts which can be deleted if only one serial port (for a modem) and one parallel port (for a printer) are required, which is the usual case. The 850 ROM chip CO112099B can be ordered from B&C Computervisions for $12 US (check ads as above).

A cheaper alternative is to buy a 2532 EPROM locally for about $10 and burn in the R: handler. The code listing of the ROM is readily available, but you will need access to an EPROM burner. The information sheet details a modification to the board to enable it to use the EPROM chip. All the rest of the parts, including the capacitors, resistors, diodes, transistors, ICs, and IC sockets needed to complete the board are available locally. If you are fortunate enough to have an electronic junk box or scrap circuit boards, you may find you already have many of these items you need. This will reduce the cost of the project even more.

PUTTING THE 850 TOGETHER -- The only tools needed are a set of long-nose pliers to bend and shape the component leads, a small pair of side-cutters to cut off the excess lead from the bottom of the board, a screwdriver to attach the voltage regulator to the heatsink, 3 meters of 1.2mm or 0.7mm fine resin core solder, and a 25 watt solering pencil with a fine tip. If you have a higher wattage soldering pencil, wrapping a copper wire of the desired size around the tip and extending it out to form a new tip will produce good results. Since all the component holes are plated through to both sides, soldering is very easy. Heat the lead and copper pad and apply just enough solder to fill the hole. Another tool you should have is a volt meter. It's a good idea to check the supply voltage values before the chips are plugged in. The parts detailed in the instruction sheet have component numbers (i.e., C101, R122) which correspond to their location on the circuit board. All the resistors needed, except one, are 1/4 watt size, although 1/2 watt resistors can be used. The signal capacitors, according to the instruction sheet, should be glass or epoxy type. I used the cheaper ceramic disc type capacitors, and they work fine. The size of the signal capacitors is not critical either, as the board is drilled with extra holes to allow up to 3 different sizes. The resistors, crystal, and signal capacitors have no polarity. The electrolytic capacitors are polarized, and the board indicates where the positive lead should go. The signal diodes, rectifiers, and zener diode are also polarized. The band end of the diodes should face the shaded end of the component outline on the board. The LED "power on" indicator should be installed with the flat edge of the base facing the AC power jack. The microchips and the transistors should be socketed to remove the possibility of heat damage, which can occur when soldering them directly to the board. The notch in the microchips should face the notch in the outline of the component on the board. The instruction sheet explains what the proper lead placement is for the transistors. Do not install the microchipsinto their sockets until after completing assembly of the board, and testing the voltages. One of the voltage regulators (A112) must have a heat sink to dissipate the heat produced by regulating the voltage of the microchips. The heat sink should be about 1 to 1-1/2 inches high by 1-1/2 to 2 inches wide, and shaped to form a U to match the outline on the board. Commercial heat sinks are available, but one can be made from any soft metal, like copper. It is not important to solder the heat sink to the board as the original was designed to be. The metal tap of the voltage regulator can be attached directly to the heat sink with a screw and nut.

The selection of I/O plugs, A/C input jack, LED power indicator, printer port, and serial port all depend upon the type of enclosure used to house the board. It is not likely the enclosure will be just the right size to allow the parts to be mounted on the board as the originals were. Select parts which will be easy to mount in your enclosure, and run wires to the board. The parallel printer port can be an RS232-C connector, or any type of connector with at least 13 pins. The serial modem port can be a 9 pin DB9 type connector, or any 8 pin connector. Make or change your cables to match the connector chosen. The original board had a shield around the microchips, but works fine without one.

POWER-UP AND TEST RUN -- I did change one component from what was called for by the original circuit. The 2 watt resistor (R155) runs across the input to output of the voltage regulator (A112). If the rugulator breaks down, more than 5 volts will be applied to the microchips. The 6532 microprocessors have a maximum of 7 volts, and will be damaged by this voltage. To protect the microchips, I left R155 out and put a 5.6 volt, 1 amp zener in from ground to the output of A112 (the band of the zener faces the output of the regulator). With all the parts in place, except for the microchips, plug in a 9 volt AC power adapter. Set a volt meter to read a positive 10 volts, and connect the ground lead to the heat sink of A112. Connect the positive lead of the volt meter to the non-banded end of CR120. Turn on the power switch and be sure the LED power indicator is on. The volt meter should read 5 volts. Now connect the positive lead to the banded end of CR120. The volt meter should read 10 volts. Change the volt meter to read a negative 10 volts, and connect the positive lead to the emitter of Q102 (the lead closest to the

AC power jack). The meter should read approximately -8.25 volts. The microchips should not be inserted until these voltages have been obtained. When inserting all the chips, make sure the notch on the end of the chips faces the notch end of the board outline of the chip.

Testing the 850 Interface is very easy. Connect the Serial I/O cable from your computer to the interface and power up the interface. Turn on the computer with the Basic cartridge in, and listen for a multi-tone sound from the speaker. The tone indicates the R: handler has loaded in properly and is acknowledged by the computer. If the interface fails to work properly, check for solder bridges across pads; check all the chips and components to see they are in the correct locations; check to see if all polarities are correct, too. I have had fun building my 850 Interface and have used it with a modem and the Hometerm program to communicate with many BBS. The shareware program 850 Express v. 3 works great, too. The club library has a copy of the 850 Interface manual, which describes in detail all the functions of the 850, and how to program software to run with it.

-- Bob Septou

LabelMaster

LabelMaster from Migraph Inc. is used for making labels in in one of three categories: a. business -- 4 preset lines; b. personal -- 3 preset lines; and, c. freestyle -- 4 lines which may be set up in any way you wish.

Labelmaster presents itself nicely on the screen upon boot up. The controls are well defined and give you quite a bit of latitude in setting up the format. The instruction manual is well written and easy to read. In fact, to use ***Labelmaster*** you do not have to read the manual, I do recommend you do read it to use ***Labelmaster*** to its fullest extent.

LabelMaster comes with 100 designes bundled with the packet and will incorporate "art" from other programs, including Degas. There is also a built in graphics editor so you can change any of the designs bundled with the software, or draw your own.

My printer will not adjust to accept computer address labels, however I did print out "labels" on regular paper. ***Labelmaster*** does a good job with the graphics and text, depending of course on which type printer you have. In talking with others who have ***Labelmaster***, they indicate ***Labelmaster*** does space correctly for labels.

One area of disappointment is you can not save freestyle designs you have made. While it is true it does not take a long time to design a label, it might be helpful if you could store those you find useful. Another disappointment is this program will print only a 3 or 4 line label. If you wish to use large labels, this program will not use their full width and may not time itself accordingly for massive printings (since my printer will not accept labels, I could not check this out.)

Labelmaster also has a built in mailing list. You can print out all labels selecting only those you wish to use. The instructions say other mailing lists may be merged with this program and ask you to "contact" the company about how to load it in. I did not have time to do this, so I was not able to try the various sorts from a large list.

Before purchasing a program such as this, first check your printer to insure it will take computer labels. If it does not, this or any other label program will be useless to you.

--Mike Rogers, A.C.E. ST Librarian

SECRET CODES

(reprint: CLAUG Feb., 1987)

Those of us who use ***Synfile+*** and ***Syncalc*** with our 8-bit Atari's may be interested to know we can use both expanded and condensed print with our dot matrix printers.

Hidden on one of the last pages of the ***Syncalc*** manual is a short explanation of how to engage condensed print mode for some printers. I'll use Star SG printer codes for examples. To engage condensed print, I press CTRL-O (not zero). The manual doesn't explain how to get back to the standard print mode after engaging condensed print. This started my investigation into the control code caper.

First, I implemented the above example on a test ***Syncalc*** spreadsheet. CTRL-O puts a small solid block on the screen (a CTRL-O graphics character). This looks familiar. Researching my files, through old programming books, digging in my closet through old game programs, I finally came to the bottom drawer of my computer cabinet deep below the game paddles and loose printer paper. The answer! A table of ATASCII characters on page 41 of "Understanding Atari Graphics" by Michael Boom shows CTRL-O, decimal 15, produces a solid block. Those of us who own Epson or compatible printers should know decimal 15 engages condensed print. So I went back to the printer manual to see how many other decimal codes are available using this method.

Some printer codes are a single digit. Some others are two digits, and others require multiple commands to enter different print modes. I find a decimal 15 engages condensed print; decimal 18 engages standard pica print. With further research I discovered decimal 14 enters expanded print for one line, and decimal 7 rings the printer's bell. ***Syncalc*** does not accept all these different printer codes, so to simplify things, I've included a small table of commands which both ***Syncalc*** and ***Synfile+*** accept:

Keystroke	Decimal Code	Function
CTRL-G	7	Ring Bell
CTRL-N	14	Expanded
CTRL-O	15	Condensed
CTRL-R	18	Pica 10 cpi

With ***Synfile+***, you should enter the codes during data entry, not when creating data fields. Combining codes to create expanded condensed print also works, but keep in mind that condensed printing remains engaged even though the expanded print only continues to the end of the line. You must use CTRL-R to cancel condensed mode and return to standard pica print. Good luck in your experimentation!

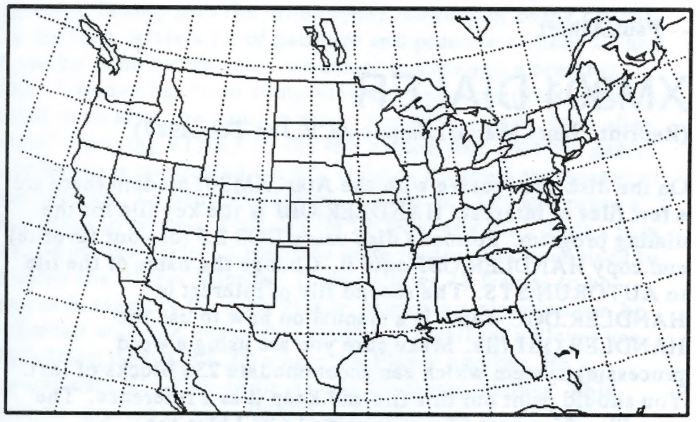
Editor's (CLAUG) Note: I have tried some of the codes myself on ***Synfile+*** and ***Syncalc***, and have used many more functions available from the Epson compatible printer I use. I have used underlining, super- and sub-scripts, double-strike and emphasized. Now some of these codes need the escape key to perform properly. If you are familiar with ***Synfile+*** and ***Syncalc***, you know the escape key is used in these programs to return to menus and the like. I find that to produce the escape character on screen for the printer functions, hold down the SHIFT and press the ESC key and you'll get this character! This is not noted in the program manuals.

-- Randy Dorn

Hardware Update

The ***Surreal-Time Clock*** on a chip and software are no longer being distributed by Black Patch Systems. The new distributers are Surreal Systems, P.O. Box 1492, Ellicott, MD 21043.

Production Managers note: This is the best battery backed up clock system to date, it has not failed to provide the correct time and date under any circumstances.



Atari Computer Enthusiasts search throught out the U.S.A (and the rest of the world) to provide you with the most up to date information about new hardware and software products for the full line of Atari personal computers. From XE to ST and all in between. Find out what's hot and what's not in the Origonal A.C.E. Newsletter, or call the A.C.E. BBS at (503) 343-4352.

DETECTOR

Compaction Detector
(Reprint: Starbase, February, 1987)

XL/XE

Have any of you modemers out there ever had problems with getting a program to run after you down loaded it? You finally got on the board after many calls and many busy signals and found this program you wanted and waited for it to down load. You probably spent an hour or more at that. Now you try to boot it up and "gadzooks"! It won't boot up! So now you have a problem. What's wrong? Maybe the program has been compacted. If so, what compactor did they use?

Detector is the answer. It is written in Basic and will tell you if the program was ***Scrunched***, ***Mashed***, ***Shrunk***, ***Crushed***, written in BASIC, or other (such as text files).

Boot up with Basic and at the prompt press START . The program asks for the file to be checked and you simply type in the file name (put the disk in the drive with the program to be checked). Press RETURN and ***Detector*** reads it. In 3 seconds it tells you how the program was compacted. The next step is to boot the correct compactor and uncompact your down loaded file. If you have a very long file it will take at least 3 disk swaps if you are a single drive owner. Then boot p your uncompacted download file and "Wallah"! There is your program!

One criteria is you have to have the various compactors in your library. But these can be found on the local BBS'. If they aren't listed, leave the SysOp a note because he probably has it in his library and will put it up for you to download.

I find ***Detector*** to be a real time saver because I have sometimes spent hours on the computer after a download trying to get a program to run. You have no doubt tried the following procedures: 1. Boot up (doesn't work); 2. Boot with BASIC (doesn't work); 3. Boot from DOS using the "L" function (doesn't work); 4. Transfer the program to a disk with different DOS and boot again (doesn't work); 5. You have a boot loader, such as "DDMENU" which boots about anything you try (doesn't work). At this time lyou are really frustrated and decide to call the BBS again and try to talk to the SysOp for help, but it's 2 am and you decide not to wake him up. Well, sometime later you finally get through to the SysOp and he tells you your problem and you finally get your program up and running. For me it has been weeks later before I got the information and finally got the program up and running! ***Detector*** has been a time saver for me and I recommend it for any modemer's library. Keep your Atari warm and keep on modeming.

Editor's note- All 8-bit files on the A.C.E. BBS are in the ARC format to facilitate downloading (the approximate savings is about 20-50%). ARC is compatible with ST and IBM ARC formats. ARC.COM is available in the special download section ('D' command from menu) of the A.C.E. BBS. Call us at (503) 3434352.

-- Wayne Maxson

24-PIN STARS

There is something new and exciting in printers, and I am NOT referring to "laser" technology. It is the tried and true dot matrix -- with a 24-wire print head. The 24-wire head's print quality compares with daisy wheel yet retains the versatility and speed of dot matrix.

There is a growing selection of 24-wire models available from NEC, Panasonic, Epson, etc., in addition to the Star Micronics new Signature series printers. Given the high quality and low prices of the Star printers, they will be a major force in the 24-wire market, as they have been in the 9-wire market. Able to print densities of 240 dots (NB-15) and 360 dots (NB24-10) per inch, these new printers all produce print which initially

appears to have been printed by a daisy wheel. For comparison, most laser printers have 300 dots resolution. On very close examination, the dots are discernable, making the print resemble that by a typewriter with a fine cloth ribbon.

The 24-wire printers need only a single pass for LQ, making the high speed LQ possible. The NB24 printers are slower and less expensive than the NB15, but produce even better print quality. The high quality draft characters will likely be used for all but the most important correspondence. I assure you I am not a Star employee, but I admit to a small prejudice. I have owned 4 Star Micronics printers in the past which I bought because they offered the best price/performance ratio of the printers I saw and tried. Not one of my previous printers ever needed that first bit of maintenance, even though they were neglected in the amount of paper dust allowed to accumulate and a general lack of routine care. Virtually the only time they were opened up was to change ribbons or DIP switch settings.

Star no longer refers to "NLQ" with these printers, but to "LQ". I agree with them. The LQ is truly letter quality. All 3 printers have Prestige type font built in. The NB24 also has Prestige Italic built in. The two 15" printers have two slots for optional ROM font cartridges; the NB24-10 has a single slot for optional fonts. This allows the use of 3 different type styles in the NB15 and NB24-10 and different styles in the NB24-15 in the usual four different sizes (pica, elite, condensed and expanded) PLUS proportional and both a double size and quadruple size (also built in), all in a single document.

Many of the printers' features can be set optionally from the convenient front control panel, DIP switches, or with embedded software codes. There are currently 5 ROM font cartridges available: Prestige Italic, Letter Gothic, Courier, Courier Italic and Orator. The two Italic cartridges are not needed for the NB24 models, since italics is built in.

These are fully IBM and Epson compatible. The NB15 can emulate 9-wire printers for those using Broderbund's Print Shop and some other graphics software. Unfortunately, the NB24s are not supported by the current issue of Print Shop and these printers do not emulate 9-wire printers. I am informed by a Star source (and confirmed through Broderbund) that they are working together to develop a printer driver for the 24-wire printers.

These printers have both forward and reverse paper motion for two column printing and other special applications. Friction and tractor paper feeds are built in. Printer buffer sizes are: NB-15 = 16k (optionally expandable to 32k); NB24-15 = 5k (expandable to 21k); NB24-10 = 8k (expandable to 24k). Multiple graphics modes with densities up to 3240 dots (NB-15) and 4860 dots (NB24). Optional parallel or serial (up to 19200 bps) interface. One year warranty with extended service and maintenance available through Honeywell Information Systems.

Anybody in an office environment, or professionals working out of their homes, should certainly take a good look at these new 24-wire printers.

-- Harley Witham

XM301 BOMB!

(Reprint: WAND, Jan., 1987)

If you own an XM301 modem, you may own an electronic "time bomb". After a rash of hardware failures which included smoking a disk drive and two printer interfaces, I found the cause of my trouble to be my XM301. The modem works fine, bu was killing off my system, piece by piece. The reason has to do with the 13 wires coming from the Serial I/O plug, although only 9 wires are actually used by the modem. The other 4 wires have about 1/8 inch bare wire showing and are just hanging around un-terminated and waiting to touch something they shouldn't. I have checked other XM301 modems and this condition exists in them also.

Here is what to do IMMEDIATELY. With all power OFF, remove the 2 screws from the bottom of the modem and lift off the plastic case. Inspect the wires where they enter the modem. You will find 4 of the wires are not connected to anything. If these 4 wires have any bare metal showing, cut it off. Be careful to keep the cut off pieces from falling into the modem. Next, tape each wire individually so it cannot possibly touch any other wires or parts in the modem. Put the modem back in its case, replace the screws, and you are done.

-- Paul Alhart

XM301 DIALER

(Reprint: Santa Maria/Lompoc ACE, Jan-Feb, 1987)

On the disk you receive with the Atari XM301 modem there are a few files of interest. HANDLER.OBJ is the key file for the dialing program. Format a disk using DOS 2.5 (or your favorite) and copy HANDLER.OBJ onto it. Change the name of the file to AUTORUN.SYS. The second file of interest is HANDLER.DOC which is a manual on how to use the HANDLER.OBJ file. Make sure you are using a word processing system which can accommodate 236 blocks of text. You should print out this file and keep it as a reference. The next file of interest (if you're using DOS 2.5) is the RAMDISK.COM file. If this is copied to your new disk it will create a ramdisk on 130XE computers during boot and put DUP.SYS and MEMSAV.SYS on the ramdisk. This makes going to and from DOS very fast.

Now boot the new disk and type in the following BASIC program. Don't forget to save it! Now give it a try. This can be adapted to your favorite programs and should work (with adaptations) in any language.

```
2200 DIM DIAL$(20),TONE$(2),TVON$(2),HKOFF$(2),HKON$(2)
2280 DIAL$="966-0611"2281 TONE$="^]O":REM "^]"="ESCAPE"
2282 TVON$="^]R"
2283 HKOFF$=^]L"
2284 TVOFF$="^]S"
2285 HKON$="^]M"
2286 EOD=12
2287 ESC=27
2320 OPEN #2,12,0,"T:":REM OPEN CHANNEL TO MODEM
2325 POKE 7,1:REM COMMAND MODE
2330 ?#2;TONE$;TVON$;HKOFF$;:REM SET TONE MODE, TURN ON
TV, TAKE OFF HOOK
2340 FOR I=1 TO 200:NEXT I:REM WAIT FOR DIAL TONE
```

```
2350 PUT #2,ESC:?#2;"K";:REM DIAL A NUMBER
2360 FOR I=1 TO LEN(DIAL$)
2370 D=ASC(DIAL$(I,I)):IF D<48 OR D>57 THEN 2390
2380 PUT #2,D:REM DIAL A DIGIT
2390 NEXT I
2392 PUT #2,EOD:REM DONE DIALING
2394 GOSUB 2500:REM WAIT
2400 END
2500 REM WAIT
2510 ?"***** PRESS ANY KEY TO CONTINUE *****
2515 TRAP 2540
2520 CLOSE #3:OPEN #3,4,0,"K:"
2530 GET #3,K
2540 POKE 7,1
2550 ?#2;TVOFF$;HKON$;:REM TURN OFF TV, HANG UP MODEM
2560 CLOSE #2:CLOSE #3:REM CLOSE CHANNEL TO MODEM
2570 RETURN
```

-- Dave Corbello

Bertie

Reprinted from Page 6 (England)

Welcome to ***Bertie***, a variation of the classic game of ***Q-Bert***. The object of the game is to move ***Bertie*** about so that he colours in every cube on the screen without falling off the pyramid, falling into the hole (which moves!) or being caught by the frog. After a lot of patience and practice screens 1,2 and 6 can be done but the rest are easier to give you a breather. Once a screen has been completed the game continues from that level even after the game is over. You have 3 lives, look after them! Pressing START or the fire button will start the game and Bertie is controlled by left, right or diagonal movement of the joystick. To pause during play, press any key and press a key again to resume. Pressing OPTION at any time during play will abort the game. A machine code routine has been used to display the Player Missiles. It also allows 48 frames to be stored in memory for each Player. Intricate amimation can be achieved with the use of this routine. To call up a Player use MC=USR(1568,A,B,C,D) where A= Player number, B= x co-ordinate, C= Y co-ordinate and D= frame number. This routine appears in lines 20000 to 20040.

TYPING IT IN Simply type in both listings and save them on the same or on tape one alter the other. If you are using cassette make sure that you change line 150 as stated in the REM and if you use disk SAVE the second listing with the filename "D:BERTIE.2". Run the first listing which will automatically load the second.

Casio CM-100

Programming on any personal computer requires a large amount of mathematical computations. One way to perform those functions is to use the computer to do it, and another way is to have a handy calculator. Personally I prefer the second method, as it doesn't take up any programming memory, and handheld calculators are usually easier to operate than their computer counterparts. For this the ***Casio CM-100*** does the trick.

For all intents and purposes the ***Casio CM-100*** is a basic 4 function solar powered calculator with parenthesis and memory calculations. To these functions they added base conversions, arithmetic operations, constants for + - * / AND OR XOR, sign change, logical operations, bit size specification, block display, shift functions (shift, rotate and arithmetic shift) and flag indications for BINARY, OCTAL, DECIMAL, HEXADECIMAL numbers.

There are built in functions to convert from decimal <-> sexagesimal, to calculate square roots, reciprocals and percentages. The ***CM-100*** can handle bit sizes of 1, 4, 8, 16 and 32 bits, also signed and unsigned numbers so you programmer types can also use it to figure out negative offsets. It uses full floating point arithmetic with underflow/overflow indication. And best of all, no batteries included (no batteries needed). The solar cell that powers the ***Casio CM-100*** can operate the unit with as little as 50 Lux, I don't know exactly how to convert Lux to wattage, but I know that the 25 watt bulb over my computer is more than enough to keep it functioning properly.

For something so small (16mmH x 76mmW x 135mmD) and light (73grams) it really packs enormous computing power, every programmer will benifit from this productivity helper. Available from most electronic outlets for about $20.

--Buddy Hammerton, ACE Production Manager

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